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AGROTIS HUBN.

495. venerabilis Walk.—Not common.

DORYODES WALKER.

496. acutaria H.-Sch.—Grayish white, with a broad, brownish, longitudinal band upon each front wing; expands 1½ inches.

CARADRINA OCHS.

497. grata Hubn.—Reddish-brown, each front wing crossed by two whitish lines; expands .90 to 1.05 inches. Common.

PLUSIA FABR.

498. pedalis Grote.—Described in Can. Ent. for Nov., 1875.

HELIOTHIS HUBNER.

499. luteitinctus Grote.—Allied to phlogriphagus.

BOLINA DUP.

500. jucunda Hubn.—One specimen, taken by Wm. Osburn.

EREBUS LATREILLE.

501. odora Linn.—Taken at Manhattan, by H. A. Brous; expands 6 inches.

ANISOPTERYX STEPH. (Phalænidæ.)

502. vernata Peck. The Spring Canker-worm Moth.—Rare.

LIPOCOSMA LEDERER. (Pyralidæ.)

503. albolineata G. & R.—Rare.

Summary of Species.

Diurnal Lepidoptera, or Butterflies	77
Sphingidæ, or Hawk Moths	27
Ægeriadæ or Ægerians	4
Zygænidæ	4
Bombycidæ, or Silkworm Moths	75
Noctuidæ, or Owlet Moths	213
Phalænidæ, or Geometrids	54
Pyralidæ, or Snout Moths	33
Tortricidæ, or Leaf-rollers	11
Tineidæ, or Tineids	4
Pterophoridæ, or Plume Moths	1
Total number of species catalogued	503

METEOROLOGICAL SUMMARY FOR 1875

PROF. F. H. SNOW'S ANNUAL REPORT AS METEOROLOGIST TO THE STATE BOARD OF AGRICULTURE.

Station: Lawrence, Kansas; latitude 38° 58′; longitude 95° 16′; elevation of barometer and thermometers, 884 feet above the sea level, and 14 feet above the ground; rain gauge on the ground; anemometer 105 feet above the ground, on the dome of the University building, 1,150 feet above the sea level.

The following features of the weather of 1875 deserve special notice:

1. The very low mean temperatures of January and February and the generally low mean temperatures of the remaining months of the year, except December, which was remarkably warm, being more than 12° warmer than the December average, and nearly 4° warmer than November.

2. The large deficiency in the rainfall for the months of August, September, October and November. The rains during the preceding months had been abundant, though not excessive, so that the subsequent deficiency did not in the least interfere with the proper growth and maturity of immense crops throughout the State. We have here an excellent illustration of the principle, to which attention was called in my report for the year 1871, that a comparatively small amount of rain well distributed is much better than a large amount unfavorably distributed.

3. The extremely small amount of snow is a marked meterological peculiarity of the year.

4. We have a splendid example of the great advantage possessed by the State of Kansas in the long period of absence of severe frosts, so that a disaster occurring to the crops in the early part of the summer, may be fully retrieved by a second, third, or even a fourth planting. On the 15th of June, a large portion of Eastern Kansas had been shorn of vegetation, by the plague of the locusts. Yet corn planted from that date up to the 10th of July, in the desolated districts, yielded bountiful crops, the first severe frost of autumn occurring on the 30th of October, too late to damage the well-ripened ears.

The following is a summary of the weather for the year:

TEMPERATURE.

Mean temperature of the year, 50°.60, which is 2°.53 below the mean of the seven preceding years. The highest temperature was 99°, on the 22d of June. The lowest temperature was 16°.5 below zero, on the 9th of January. Mean temperature at 7 a. m., 44°.2; at 2 p. m., 60°.2; at 9 p. m., 48°.8.

Mean temperature of the winter months, 25.°62—3°.19 below the aveaage; of the spring, 50°.60—2°.70 below the average; of the summer, 74°.87—2°.17 below the average; of the autumn, 51°.49—1°.04 below the average.

The coldest month of the year was January—the coldest January, and the coldest month on our record—with mean temperature 15°.60; the coldest week was January 8th-14th, with mean temperature 1°.94; the coldest days were January 13th and 14th, with mean temperatures 7°.7 below zero. The mercury fell below zero 12 times, 9 of which were in January and 3 in February.

The hottest month of the year was July, with mean temperature of 76°.63; the hottest week was June 19th to 25th, mean temperature 83°.41; the hottest days were June 22d and July 16, which each had a mean temperature of 86°.6. The mercury reached or exceeded 90° on 32 days, viz: 3 in May, 13 in June, 8 in July, 2 in August, and 6 in September. There were 58 such days in 1874. The mercury did not reach 100° during the year.

The last light frost of spring was on May 4th; The first light frost of autamn was on September 18th, giving a period of 137 days entirely without frost. The last severe frost of spring was on April 17th; the first severe frost of autumn was on October 30th, giving a period of 196 days without severe frost. No cold weather during the year caused any damage to fruit.

RAIN.

The entire amount of rain, including melted snow, was 28.87 inches, which is precisely the same amount as in 1874, and falls below the average rainfall of the past eight years by 4.11 inches. Either rain or snow fell on 106 days, 4 more than the average number. The longest interval without rain, during the growing season, March 1st to October 1st, was 18 days, June 8th to 27th. The number of thunder showers was 21.

SNOW.

The entire depth of snow was 5 inches, which is the least annual amount on our eight years' record, and is 20.36 inches below the average. Of this amount 4 inches fell in February and 1 inch in March. There were flurries of snow in January, April, November and December. The last snow flurry of spring was on April 12th; the first snow of autumn was on November 13th.

FACE OF THE SKY.

Average cloudiness of the year 44.81 per cent. of the sky, which is only .78 per cent. below the average. The number of clear days (less than one-third cloudy) was 162; half clear days (between one-third and two-thirds cloudy), 115; cloudy (more than two-thirds), 88. There were 23 days without a cloud, and an equal number without a trace of sky. June was the clearest month, with a mean cloudiness of 31.44 per cent. January was the cloudiest month, mean cloudiness 54.84 per cent. The mean cloudiness at 7 a. m., was 47.67 per cent.; at 2 p. m., 48.32 per cent.; at 9 p. m., 38.44 per cent.

DIRECTION OF THE WIND.

During the year (three observations daily) the wind was from the southwest, 330 times; northwest, 298 times; southeast, 161 times; northeast, 135 times; south, 61 times; east, 47 times; north, 38 times; west, 10 times; calm, 15 times. The south (including southeast, south and southwest) winds outnumbered the north (including northeast, north and northwest) winds in the ratio of 552 to 471.

VELOCITY OF THE WIND.

The number of miles traveled by the wind during the year was 145,316. This gives a mean daily velocity of 398.12 miles, and a mean hourly velocity of 16.59 miles. The position of the anemometer cups at an elevation of 105 feet above the top of Mt. Oread, 325 feet above the river level, secures exposure to the full force of the wind. The maximum velocity was 75 miles an hour, on January 8th. The greatest daily velocity was 1,070 miles, on February 3d. The strongest winds were in March and April; the lightest were in July and August.

BAROMETER.

Mean height of the barometer column, 29.102 inches. Mean, at 7 a. m., 29.126 inches; at 2 p. m., 29.077 inches; at 9 p. m., 29.103 inches; maximum, 29.856 inches, at 7 a. m., January 9th; minimum, 28.344 inches, at 2 p. m., May 7th, giving a yearly range of 1.512 inches. The highest monthly mean was in January, 29.303 inches; the lowest was in May, 29.006 inches. The barometer observations are corrected for temperature, but not for elevation, thus affording the means of determining the altitude of our station.

RELATIVE HUMIDITY.

Mean for the year, 65.53; at 7 a. m., 77.35; at 2 p. m., 46.58; at 9 p. m., 72.68. The dampest month was January; humidity, 78.10. The driest month was April; humidity, 57.60. There were only five fogs during the year. The minimum humidity for any single observation was 9 per cent. of saturation, at 2 p. m., March 27th.

The following table gives the mean temperature, the extremes of temperature, the relative humidity and the rainfall for each month of the year 1875, and a comparison with preceding years:

MONTH	MEAN TEMPERATURE	MAXIMUM TEMPERATURE	MINIMUM TEMPERATURE	RELATIVE HUMIDITY	RAINFALL IN INCHES	EXCESS OR DEFICIENCY OF RAINFALL
January	15.60	46.0	—16.5	78.10	0.12	1.34 def.
February	21.92	55 0	— 8.0	74.72	0.80	0.16 def.
March	37.10	82.0	9.5	64.93	2.61	0.50 ex.
April	49.70	82.0	23.0	57.60	2.51	0.41 def.
May	65.00	95.0	30.0	60.30	3.39	0.31 def.
June	75.47	99.0	49.0	60.20	3.45	0.14 def.
July	76.63	97.5	65.0	73.05	6.60	2.02 ex-
August	72.50	91.0	55.0	68.08	2.90	1.51 def.
September	65.75	95.0	38.0	64.35	1.39	2.30 def.
October	53.18	86.0	25.0	56.23	1.16	1.35 def.
November	35.55	70.0	2.0	62.13	0.36	1.55 def.
December	39.35	73.0	0.0	66.66	3.55	1.88 ex.
Year 1875	50.60	90.0	—16.5	65.53	28.87	4.11 def.
" 1874	54 20	108.0	— 3.0	65.52	28.87	4.11 def.
" 1873	52.71	104.0	– 26.0	64.06	32.94	0.04 def.
" 1872	51.90	97.0	—18.0	64.40	32.63	0.35 def.
" 1871	54.30	103.0	— 6.0	....	33.23	0.25 ex.
" 1870	54.50	102.0	—10.0	68.40	31.38	1.60 def.
" 1869	50.99	96.0	— 5.0	....	38.51	5.53 ex.
" 1868	53.36	101.0	—16.0	....	37.42	4.44 ex.